

margin a fine yellow streak as well ; close to it, at the base, a faded yellow spot is found.

Head black ; palpi laterally white ; forehead with two white streaks ; top of the head with four white points ; antennæ in the female brownish ; prothorax above with two yellow points ; abdomen below and on the sides spotted yellow.

EXPLANATION OF PLATE XXIV.

Fig. 1. *Papilio hahneli*, p. 396.
2. *Heliconius venus*, p. 396.

Fig. 3. *Heliconius godmani*, p. 397.

3. On a Collection of Butterflies from Sikkim.

By H. J. ELWES.

[Received April 24, 1882.]

(Plate XXV.)

When at Darjeeling in 1881 with Mr. Godman, I made arrangements with a native plant-collector, a Sikkim Bhotea, who had accompanied me on two expeditions into the interior, to visit the Chumbi valley, on the Tibetan frontier of Sikkim, to collect seeds and insects. This he did during the months of August and September last ; and through the kind assistance of my friend Mr. Gammie I have received a considerable number of Butterflies in papers in tolerable condition. Though I cannot be certain of the exact localities in which they were taken, I have little doubt, from my knowledge of the country and the plants which came with them, that a considerable portion of them were taken on the Tibetan side of the frontier, which has never been visited by any European, on account of the jealousy of the Tibetan officials. On two occasions I have looked down into this valley from passes 15,000-16,000 feet high on the Chola range, which bounds Sikkim on the north-east ; and, judging from what I saw and from the information we have obtained through native sources, it is a valley of somewhat different climate and vegetation from the Sikkim valley, though the Machu river, which drains it, flows southwards through Bhotan to the Bay of Bengal. It is said to be much drier in summer and colder in winter than Sikkim valleys of similar elevation ; and as a number of the plants and butterflies I received are not known to occur on our side of the passes, I have no doubt that the collectors passed some part, at any rate, of their time in this valley.

With the collection came a number of other species which occur at lower elevations in Sikkim, and which were probably taken on the journey up. This part of the expedition is often made to last as long as possible by these native collectors, who infinitely prefer to spend their advance-pay in feasting at some of the villages on their road to hard work in a cold climate on short commons.

The most interesting species in the collection are Palearctic forms,





allied to or identical with others found in Ladak or in Europe. Four of these were only known before in Ladak, at a distance of about 800 miles from Sikkim; but as the intermediate country is unexplored, they probably occur all along the Himalayan frontier of Tibet.

On a future occasion I propose to compare the Butterflies of Palæarctic genera found in the Himalaya more closely with their European and N.-Asiatic congeners; but in the meantime I will enumerate those species which are of special interest in this collection, as I have no doubt that the number of species now received forms but a small proportion to those which exist at high elevations in the South-eastern Himalaya.

PAPILIO MACHAON, var. ASIATICA, Mén. Cat. Mus. Petr. i. p. 70.

A very large number of this species in good condition, and varying but very slightly amongst each other. The type in Sikkim, where the species is found at 8000–10,000 feet elevation, is darker and more heavily marked than in Europe, smaller and more uniform in colour than in Japan. It closely resembles on the upperside *Papilio zolicaon* of California, but differs considerably from that species or variety beneath.

Specimens from Nepal agree with those from Sikkim; but those from the North-west and Kashmir seem nearer to the European form in tint.

PARNASSIUS EPAPHUS.

P. epaphus, Oberthür, Ét. Ent. livr. iv. p. 23 (1879).

P. jacquemontii, Gray, Cat. Lep. Brit. Mus. p. 76, t. xii. figs. 1, 2.

This species has lately been distinguished by M. Oberthür from *P. jacquemonti*; but it is extremely difficult to say whether it is really distinct or not.

I have seen four specimens in the British Museum and three in the Hewitson collection, all that exist in England to my knowledge. These agree very well with each other and with Gray's figures. They are probably from the same part of Ladak, at an elevation of 16,000 feet, and perhaps were all taken by the same person, Major Charlton.

They differ from *P. jacquemonti* of Boisduval in being smaller and in the shape of the fore wings, which are narrower and more pointed. As a rule there are no red spots at the anal angle of the hind wing, though this is not a character of much importance. The antennæ are distinctly ringed and the fringes distinctly spotted.

PARNASSIUS EPAPHUS, var. SIKKIMENSIS, n. var. (Plate XXV. figs. 4, 5.)

I have now received from Sikkim fourteen specimens of a form which probably represents the same species in this part of the Himalaya, and which are distinguished principally by the smaller size, and by the broad white fringes distinctly marked at the end of each

nerve with square black spots, which, in fact, give the fringe the appearance of being alternately black and white.

These fourteen specimens agree perfectly in form and vary but little in size. They are very similar in their pattern and tint, but the red spots do not agree in any two specimens. Some have one on the costa of fore wing, another just below it, and a third on the posterior margin. In others one, two, or all of these are yellowish, plain black, or nearly absent. On the hind wings there are usually three large black spots with red centres; but in two specimens the centre of the spots is yellow, and in one the spots are plain black.

This species, which I propose to distinguish as var. *sikkimensis*, occurs at great elevations on the frontier of Sikkim and Tibet. I took it myself on an unknown pass by which I crossed from the upper Lachong valley to the Cholamoo lake in Tibet, at an elevation of nearly 19,000 feet, in September 1870. I found a single pair *in copulâ*, which I put in an envelope and gave to Mr. Atkinson on my return to Darjeeling. These specimens are now in the Hewitson collection, under the name of *P. simo*, which at first sight they very closely resemble. I believe, however, after careful examination of my series, and of all the specimens of *P. simo* which exist in England, that the two species are well defined by structural characters, which in this very difficult genus are of much more importance than size or colour.

PARNASSIUS ACCO.

P. acco, Gray, Cat. Lep. Brit. Mus. p. 76, t. xii. figs. 5, 6.

P. simo, Gray, l. c. t. xii. figs. 3, 4.

After a careful examination of the types of these species and of three others in Messrs. Godman and Salvin's, and one in the Hewitson collection, which are all that I know of in England, I have come to the conclusion that they are but varieties of one species, differing only in size and in the number and colour of the spots. They are, however, distinguished from *P. epaphus* by the colour of the fringes, which in fresh specimens are plain white, but in slightly worn ones, such as the type, are dark, but still quite plain. The antennæ also are plain black, not ringed as in *P. epaphus* and *P. sikkimensis*, and the ground-colour of the wings is distinctly greyer and less pure white than in *P. sikkimensis*. The fore wings also seem constantly more pointed at the apex, and more rounded at the posterior angle. These characters are not to be shown plainly by a figure, but are evident when a series of the insect is carefully examined.

The female figured by Gray (fig. 6) is much more heavily spotted on the hind wings than one in Mr. Godman's collection; but the species seems less variable in this respect than *P. epaphus*, none of those I have seen of *P. acco* or *P. simo* having any red marks on the fore wing. The underside is perhaps more different from *P. sikkimensis* than the upper, but the difference cannot be explained in words.

This species is known from four specimens in the British Museum and one in the Hewitson collection, collected by Major Charlton in

Ladak at 16,000 feet; besides three others in Mr. Godman's collection from Lapsang in Ladak, 17,000 feet; and a single specimen, which agrees perfectly in all the characters I have mentioned with these, and is intermediate in size between *P. acco* and *P. simo*, was among my fourteen examples of *P. sikkimensis*, showing, if my views are correct, that the species are constantly different, though they occur together in similar localities 800 or 900 miles apart.

PARNASSIUS HARDWICKII, Gray, Cat. Lep. B. M. p. 76, t. xii. figs. 8-11. Var. *CHARINO*, Gray, *l. c.*

A very variable species, found from Kashmir to Sikkim, from about 8000 feet up to 15,000. The variety named *P. charino* by Gray occurs at this great elevation in Ladak; and four specimens, which agree with his plate in being of much darker colour than the common form, came with *P. sikkimensis*. It may be known with certainty by the five blue eyes on the hind wing, which, so far as I have seen, are never wanting, though sometimes reduced to spots.

PIERIS BRASSICÆ, Linn.

P. brassicæ, var. *nipalensis*, Doubl. Lep. Brit. Mus. i. p. 32; Gray, Lep. Nepal, p. 9, t. 6. figs. 1, 3.

P. nipalensis, Moore, P. Z. S. 1865, p. 490.

I cannot see any reason to separate this from the European insect. A series of specimens from Sikkim, Nepal, and Kashmir average larger than British ones, but not larger than some I have from Asia Minor; and there is nothing in colour to distinguish them. There were many examples in the present collection.

PIERIS AJAKA, Moore, P. Z. S. 1865, p. 490, t. xxxi. fig. 16.

A single female of an insect which for the present I refer to this species, which, however, I do not see how to separate from the forms which I have alluded to previously from Amurland and Japan (*cf.* P. Z. S. 1881, p. 876).

It is intermediate between *P. melete* and *P. napi* above, and resembles the form *bryoniæ* beneath. Similar specimens from the Khasia hills are in my collection.

DELIAS BELLADONNA, Fabr., Gray, Lep. Ins. Nepal, t. 8. fig. 2.

It seems to me that there are two species confused under this name. Those I have from Nepal agree perfectly with Gray's plate; but the Sikkim form, of which I have now secured several specimens, has in most cases no yellow on the anal angle or interior margin of hind wing. In some specimens, however, there is a trace of it; so that without knowing more of the intermediate forms in distribution, I should hesitate to separate this form.

COLIAS MYRMIDONE, Esp.

C. myrmidone, Koll., Hüg. Kasch. Reise, p. 411.

C. feildi, Mén. Cat. Mus. Petr. i. p. 79, t. 1. fig. 5.

? *C. edusa*, Gray, Lep. Ins. Nepal, t. 5. fig. 2.

C. edusa, var. *myrmidone*, Moore, P. Z. S. 1865, p. 492.

Of this species I received a very large number, mostly fresh and in good order. I agree with Kollar in thinking that it is inseparable from *C. myrmidone* of Europe, though perhaps Sikkim specimens are as a rule brighter, and the black spots on the underside of the fore wing larger and more distinct. An individual specimen from the Himalaya could not be distinguished; but I think a series might be known as from India without seeing the labels.

? *DERCAS WALLICHII*, Doubl. Proc. Ent. Soc. v. p. 47.

Gonepteryx urania, Butl. P. Z. S. 1865, p. 458, t. 26. fig. 5.

I received a single specimen which I can only doubtfully identify with this species, though if I had a series which agreed with it I should be inclined to say it was distinct. It differs from Butler's plate in the shape of the fore wings, which are more arched on the costa and much less pointed at the apex; the hind wings also appear rounder at the anal angle; the colour is much brighter, especially on the costa and near the apex of the fore wing, and the markings beneath differ slightly. *D. wallichii* is found, I believe, in the Khasias; but I never saw a specimen from Darjeeling, where *D. verhuellii* is found, but not commonly.

A specimen in the British Museum, from Shillon, nearly agrees with my example.

LYCÆNA PHERETES, Hb., var. *ASIATICA*, n. var.

I was at first disposed to consider this a new species, as it differs from *L. pheretes* in the narrower and more pointed fore wing, and in having much more green gloss on the underside; but noticing that Dr. Staudinger, in his list of the Lepidoptera of Tarbagatai in Central Asia (Stett. ent. Zeit. 1881, p. 263), mentions that *L. pheretes* has the same difference of colour there, I do not think the small number of specimens I have received (four females and two males) justify me in separating the species at present, though the difference, if constant, is considerable. I know no *Lycæna* at all like it in the Himalayas, but have received a very beautiful new species from Major Marshall, *L. ellisi*, which occurs at high elevations in the N.W. Himalaya, and seems allied to, though very distinct from it.

ILERDA SAPHIR?, Blanch. (Plate XXV. figs. 9, 10.)

Ilerda saphir, Blanch. Compt. Rend. lxxii. p. 811 (1871)¹.

I am at present not able to say with certainty what is the proper name of this species, of which I received a fair series of both sexes. I have examined the specimens in the British Museum and in the Hewitson collection, as well as Mr. Moore's. In that gentleman's opinion it is a new species between *I. moorei*, Hew., and *I. hewit-*

¹ There is a specimen from Bhotan in the British Museum which agrees with mine, and, as far as I can judge, it is the same as *Thecla saphir* from Moupin, in East Tibet.

soni, Moore, and resembles the former very closely above, but not below. The males have a more purple tinge on both wings than *I hewitsoni*, but the females are hardly, if at all, to be distinguished from this species, which I have taken at Darjeeling in December. The genus is a very difficult one, as there are four or five very nearly allied species in the Himalaya.

VANESSA LADAKENSIS, Moore, Yarkand Mission, Lep. p. 3, t. i. fig. 2 (1879).

About fifteen specimens, mostly worn, of this species, all of which agree in their characters, and can be known at once from the forms of *V. urticae* by the shape of the fore wings, which are rounded at the apex, with hardly a trace of the projecting point below the angle which is conspicuous in *V. urticae*, *V. kashmeriensis*, and *V. polychloros*. It seems to be an inhabitant of the high cold plateau of Tibet, was first taken at Gogra in Ladak, and has never been sent to England from Sikkim, to my knowledge, before; so I think we may conclude that it does not occur on this side of the passes.

VANESSA KASHMERIENSIS, Koll. Kasch. p. 442, t. ii.

Some of the specimens of this species are very near *V. rizana* of Moore, which seems to me hardly separable from it.

Sikkim specimens, as a rule, are darker than those from Kashmir. It occurs at and below Darjeeling during winter, and I have taken it on sunny December days at 4000 feet.

VANESSA C-ALBUM, Linn.

A single, rather worn specimen was included in the collection, which, until we know more of the Himalayan varieties, I prefer to call *V. c-album*. It is certainly much nearer to Anur specimens of *V. c-album* than to what I have from Mr. Moore as typical *V. agricola*. I have only seen one specimen from Sikkim before, which differed from this one; and four others which I possess from various parts of the Himalaya differ from each other as much as a similar number of European specimens from various localities do. Unfortunately, I have but fifty specimens in all of this group—not a tithe of what would be required to illustrate it properly; but the more I see, the more impossible it seems to define them clearly. I should be much obliged to any entomologist for the loan of local series showing the amount of variation in different localities; but, so far as I can see at present, no one can say to what species a given specimen of any of these forms belongs, unless he was told where it came from; and if that be so, what more is necessary to prove my theory?

ARGYNNIS ALTISSIMA, n. sp. (Plate XXV. fig. 8.)

Of this species I received ten specimens, all of which, as well as I can judge in the somewhat crushed state of their bodies, are males. Nine of them agree very well in size and pattern; but the tenth is at least a quarter larger in size, and has the wings broader and less pointed. In fact it has the appearance of a less alpine variety than

the others, which, judging from the collector's marks, were taken with *Ceneis pumila* and *Parnassius* at a very great elevation. This species has a very distinct and peculiar appearance, quite unlike any other *Argynnis*. Above, the markings are generally similar in arrangement to those of *A. gemmata*; but the row of spots on the exterior margin are usually whitish, the ground-colour is paler, and the fringes spotted with white.

Beneath, the position and arrangement of the markings are very similar to those of *A. gemmata*; but all the silvery spots are more elongated and less brilliant, and the deep fulvous markings are almost absent.

Expanse 1·1 inch, except the single specimen above mentioned, which is 1·4 inch across.

ARGYNNIS GEMMATA. (Plate XXV. figs. 6, 7.)

A. gemmata, Butler, Ann. Nat. Hist. 1881, vii. p. 32; Elwes, *l. c.* 1881, vii. p. 467.

Of this distinct and lovely species I received a considerable number of both sexes, which I take the opportunity of figuring here, as a coloured plate is necessary to give an idea of its beauty. The females differ from the males in having the base and posterior margin of the fore wing grey, and the marginal spots pale outside; the fringes also are pale-spotted, which is not the case in the males. This species must be very abundant at some localities, probably at a great elevation; and it is just possible that *A. altissima* is a still more alpine form of it, analogous to *A. melitæa*, var. *merope*, though more different from *A. gemmata* than *A. merope* is from *A. aurinia*.

ARGYNNIS CHILDRENI, Gray, Zool. Misc. p. 33; Lep. Ins. Nep. p. 11, t. 11.

A single pair of this fine species.

ARGYNNIS LATHONIA, Linn.

A. issæa, Moore, apud Gray, Lep. Ins. Nep. p. 11.

Moore seems to have followed Gray, who followed Doubleday, in separating the Himalayan form from the European one. I cannot find that any description of it has been published; and I agree with Kollar in saying that it is identical with *A. lathonia*, though a large series of specimens seem somewhat larger and darker than a series from various parts of Europe. There were some hundreds in the present collection; but the insect is not common near Darjeeling.

CHIONOBAS PUMILUS. (Plate XXV. fig. 3.)

C. pumilus, Feld. Reise Nov. p. 490, t. 69.

Ten specimens agree very fairly with Felder's plate; but the markings are more distinct and well defined, especially the outer edge of the band on the hind wing. My specimens are also darker in colour and less yellow in tint than the figure of *C. pumilus*. As the papers containing these specimens were marked in Tibetan with the same characters as the *Parnassius*, I presume they were taken at the

same time and place. *C. pumilus* was found by the late Dr. Stoliczka on the Lanak Pass (15,500 feet) in Ladak, and has never been taken by any one else as far as I know. There are no specimens of it in English collections that Mr. Moore or I have seen.

DEBIS (TANSIMA, Moore) MASONI, n. sp. (Plate XXV. fig. 2.)

Resembles *Debis verma*, Koll., in general appearance, size, form, and colour, but distinguished on the upperside by a single white spot near the apex of the fore wing, which is slightly undulate and fringed white; the anterior angle of the hind wing is bordered and fringed white. On the underside there is one ocellus close to the white spot near the apex of fore wing, and the ground-colour of the hind wings is overlaid with greyish scales, and without the transverse steely bands of *D. verma*. The ocelli resemble those of *D. verma* in number, size, and position, but are ringed with hair-brown instead of fulvous. The sexes do not differ.

Of this species, which, though allied to *D. verma* and to *D. isana*, Koll., is very distinct, I received a large number of specimens, which do not vary. As this insect has never been taken before, I imagine it to be from the Chumbi valley, on the other side of the passes, but it is probably not found at extreme elevations.

LETHE (?) MARGARITÆ, n. sp. (Plate XXV. fig. 1.)

A single male specimen of this fine and distinct species was in the collection, and appears very distinct from any thing which has been described. At first sight it seems most nearly allied to *Neorina hilda*, but does not quite agree with that species in neuration. Neither does it agree exactly with either *Zophoessa* or *Lethe*, though it somewhat resembles *L. lunaris*, Butler, in markings. Until we know more of the insect, it will be best to leave it in the genus *Lethe*, which requires careful revision, as the species at present comprised in it are very varied.

Antennæ in size and shape like those of *N. hilda*, rufous with reddish tip. Palpi longer, more pointed, and less hairy than in *N. hilda*. Abdomen and legs rather shorter.

Colour hair-brown, paler beneath, with a transverse pale fawn-coloured band beyond the disk, well defined on underside and fainter above. A similar band near the margin of the wing at an acute angle to the first, enclosing five white-pupilled ocelli in a straight row. On the exterior margin are two narrow lines of similar colour to the bands. Pattern of hind wings beneath somewhat similar, but the transverse band is rather curved outwards, and there is a large ocellus between the first and second subcostal nervule. The ocellus at anal angle has a double pupil. The bands on hind wing do not show on the upperside, and the ocelli are indistinct.

Expanse 3·1 inches.

NEORINA HILDA, Doubl. & Westw. Gen. D. L. p. 369, t. 65. fig. 2.

A single male specimen of this fine species, taken probably in the lower valleys of the interior, was in the collection.